

REMARKS

Claims 1-20 remain in this application. Claims 1-2 and 12-12 have been amended, without prejudice. By these amendments, no new matter has been added.

The present patent application is drawn to a method and system for operating a network server. The method operates at a level above network devices that create and manage packets according to protocols of packet-switching networks. According to the method and system, the transfer rate of large files that disproportionately deplete server resources are slowed while the transfer rate for smaller files is essentially unchanged. The file transfer rate is controlled by adjusting the delay time between file transfer packets or by adjusting the number of information bits in the packet of information so as to cause later-transferred portions of the file to be delayed by increasing amounts, until all portions of the file have been transferred, whereby the entire file is transferred at a rate that decreases with increasing file size. Small files with few packets will experience very little delay while larger files with a greater number of packets will be subject to longer and longer delay times as each packet is transferred and the delay time is increased. Thus, the rate at which a file is transferred decreases with the file size; larger files are transferred at a slower rate than smaller files. Equation 1, page 9 provides an example of this dependence, showing that, for a given packet size "P," the delay time increases depending on the file size "F." Claims 1 and 11 have been amended to more particularly define these aspects of the invention.

Claims 1-2 and 11-12 were rejected under 35 U.S.C. § 112 as indefinite for the phrases "substantially less than a total," "progressively increasing amounts," and "ever-increasing." These rejections are respectfully traversed. Claims 1-2 and 11-12 have been amended to remove these phrases, which are therefore moot. Claims 1-2 and 11-12 are definite, and these rejections should therefore be withdrawn.

The Examiner rejected Claims 1-20 under 35 U.S.C. § 102(b) as anticipated by Kalkunte. These rejections are respectfully traversed. Failing to disclose every element

recited by the independent claims, Kalkunte presents no bar to patentability of the present invention.

Kalkunte discloses increasing network efficiency by reducing network collisions through management of low-level packet delay times. Kalkunte fails to disclose or suggest forming packets at a higher level, and then transferring the packet to a lower-level component for packeting according to a network protocol. That is, Kalkunte fails to disclose or suggest

transferring the packet of information from the memory to a lower-level network component operative to configure the packet as at least one lower-level packet according to a protocol of a packet-switched network for transmission to the one of the plurality of client devices after the removing step,

wherein the packets of information are handled as defined elsewhere by claims 1 and 11.

In the Office Action at page 9, it is apparently argued that byte-by-byte transfer to the FIFO register and from thence to the media access control (MAC) core for packetization according to a TCP/IP protocol, as disclosed at Kalkunte at 4:49-63, reads on the claim language recited above. This conclusion is erroneous; however, because claims 1 and 11 require that the packet size or delay interval be controlled in a defined way to cause the file to be transferred at a rate that depends on file size. Transferring byte packets to a FIFO register does not satisfy these limitations, being merely a caching operation for the MAC core. When read as a whole, claims 1 and 11 require that the information packets be handled in a particular way to achieve a defined result which is distinct from mere memory caching for a downstream device, as disclosed by Kalkunte.

That is to say, Kalkunte fails to disclose controlling at least one of the delay period and packet size and to cause transmission delay that depends on file size, namely:

repeating the removing step, the transferring step, and the pausing

step in any operative order until all of the file has been transferred to the lower-level network component, wherein at least one of the delay period and the defined number of information bits in the information packet is controlled so as to cause later-transferred portions of the file to be delayed by increasing amounts until all portions of the file have been transferred, whereby the entire file is transferred at a rate that decreases with increasing file size

as defined by claims 1 and 11. Claims 2 and 12 specifically define increasing the delay time after each iteration of the removing, transferring and pausing steps. Kalkunte fails to disclose or suggest these elements.

Kalkunte discloses that under some circumstances (for example, if a collision is detected) a packet may be delayed so as to avoid network collisions. See, e.g., 5:54-57. Under other circumstances during transmission of the same file, Kalkunte teaches reducing the delay interval to zero to accomplish a faster overall transmission. 3:35-46; 6:45-55.

Kalkunte therefore teaches away from the present invention as defined by claims 1 and 11. According to the invention, the packets are controlled so as to cause transmission delays that increase with increasing file size, by increasing delays for later portions of a file. In contrast, Kalkunte teaches how to *increase* network throughput, which necessarily requires *decreasing* transmission times and conversely *increasing* transmission rates. 8:21-29; Tables 1-3. Kalkunte fails to disclose or suggest increasing the delay interval or reducing the packet size so as to cause the entire file to be transferred at a rate that decreases with increasing file size, as defined by claims 1 and 11.

Kalkunte further fails to disclose or suggest increasing the defined delay period after each iteration of the repeating step, as defined by claims 2 and 12. To the contrary, Kalkunte teaches away from this, by teaching that the delay period should be reset to zero to give priority to "the station having deferred once to another station." 6:45-55.

Kalkunte further fails to disclose or suggest determining the calculated value for a

delay period from the file size or the file type so as to cause the entire file to be transferred at a rate that decreases with increasing file size, as defined by claims 7 and 17. As detailed in the last response, Kalkunte discloses modifying delay times based only on network conditions, not on file size. In every instance disclosed in Kalkunte, the delay interval is determined based on network conditions. 5:23 – 7:49; Figs. 3A-3C.

Although Kalkunte makes a passing reference to “the byte length of the received frame is passed to FIFO control 34” (4:63-64), this does not disclose any action related to file size. According to its use in the network arts, a “frame” is a “data link layer ‘packet’ which contains the header and trailer information required by the physical medium. That is, network layer packets are encapsulated to become frames.” frame. Dictionary.com. *The Free On-line Dictionary of Computing*, Denis Howe, <http://dictionary.reference.com/browse/frame> (accessed: October 09, 2006). Therefore, Kalkunte merely discloses passing packet size to a low-level FIFO controller, and fails to disclose any calculation based on file size.

In contrast, claims 1 and 11 define a “file” that is clearly a high-level entity distinct from and comprised of multiple packets, for example an MP3 file. See application, p. 4, lines 20-21; page 5, lines 7-10. As known in the art, a “file” is “a collection of related data or program records stored as a unit with a single name.” file. Dictionary.com. *The American Heritage® Dictionary of the English Language*, Fourth Ed., Houghton Mifflin Co., 2004. <http://dictionary.reference.com/browse/file> (accessed: October 09, 2006). In the computing arts, “the prototypical file has these characteristics: it is a single sequence of bytes, it has a finite length, unlike, e.g. a Unix device, it is stored in a non-volatile storage medium, it exists (nominally) in a directory, and it has a name that it can be referred to by in file operations, possibly in combination with its path.” file. Dictionary.com. *The Free On-line Dictionary of Computing*, Denis Howe, <http://dictionary.reference.com/browse/file> (accessed: October 09, 2006).

A frame passed to a FIFO register, as disclosed in Kalkunte at 4:61-63, lacks the high-level characteristic of a file, such as a file name. Packet size is not synonymous

with file size under any reasonable claim construction. On page 9 of the Office Action, it is argued that 4:49-63 of Kalkunte discloses transferring a packet to a lower level file. It is respectfully submitted that this portion of Kalkunte cannot read simultaneously on both "packet" and "file." That is, if Kalkunte's use of FIFO registers reads on high level packetization as argued on page 9 of the Office Action, it cannot fairly be said to also read on use of a file size characteristic in determining a delay period as defined by claims 7 and 17, as argued in paragraph 7 of the Office Action.

In summary, Kalkunte is concerned only with whether or not a collision has occurred in determining a delay period. 5:23 – 7:49; Figs. 3A-3C. Kalkunte fails to disclose or suggest "determining the calculated value from the file size or the file type," as defined by claims 7 and 17. These claims are therefore independently allowable.

With reference to claims 8 and 18, Kalkunte fails to disclose or suggest "setting the defined number of information bits in the packet of information to a calculated value after each execution of the pausing step." Kalkunte discloses setting a calculated *delay* period, however, this is distinct from setting the number of bits in a packet to control transmission time for a file. 3:9-61. Kalkunte nowhere discloses changing the number of information bits in a packet. It is respectfully submitted that networks normally use a fixed packet size, and do not change the packet size during transmission so as to increase transmission time. The Examiner is requested to provide a reference for the statement on page 6, para. 8 that "[n]etworks allow the size of packets to be set as claimed." In the absence of a reference showing the claimed subject matter, claims 1 and 18 should be regarded as independently allowable.

Other dependent claims 3-6, 9-10, 13-16 and 19-20 contain additional elements that are not disclosed or suggested by Kalkunte and are therefore independently allowable. In addition, each of the dependent claims is also allowable as depending from an allowable base claim.

In view of the foregoing, the Applicant respectfully submits that Claims 1-20 are in condition for allowance. Reconsideration and withdrawal of the rejections is

Serial No. 09/837,319  
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Page 12

respectfully requested, and a timely Notice of Allowability is solicited. To the extent it would be helpful to placing this application in condition for allowance, the Applicant encourages the Examiner to contact the undersigned counsel and conduct a telephonic interview.

While no fees are believed due in connection with the filing of this paper, the Commissioner is authorized to charge any shortage in fees due in connection with the filing of this paper, including extension of time fees, to Deposit Account No. 50-3683.

Respectfully submitted,

  
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